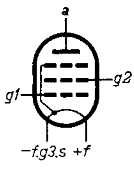
"Miniwatt" **DF 91**

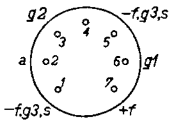
PENTODE for use as H.F. and I.F. amplifier in battery receivers
PENTHODE pour utilisation en amplificatrice H.F. et M.F. dans des appareils-batterie
PENTODE zur Verwendung als H.F.- und Z.F. Verstärker in Batteriegeräten

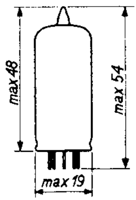
Heating: direct by battery current, rectified A.C. or D.C.; series or parallel supply
Chauffage: direct par courant batterie, C.A. redressé ou C.C.; alimentation en série ou en parallèle
Heizung: direkt durch Batteriestrom, gleichgerichteten Wechselstrom oder Gleichstrom; Serien- oder Parallelspeisung

| | |
|---|---|
| Parallel supply:<br>Alimentation en parallèle:<br>Parallelspeisung: | Vf = 1,4 V<br>If = 0,05 A |
| Series supply:<br>Alimentation en série:<br>Serienspeisung: | Vf = 1,35 V |

Dimensions in mm
Dimensions en mm
Abmessungen in mm




Base, culot, Sockel: Miniature

| | |
|---|---|
| Capacitances<br>Capacités<br>Kapazitäten | Cag1 $<$ 0,01 pF[1)]<br>Ca = 7,5 pF<br>Cg1 = 3,6 pF |

[1]) Measured with external screening
Mesuré avec blindage extérieur
Gemessen mit äusserer Abschirmung

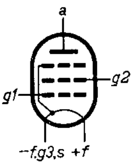
# PHILIPS DF 91

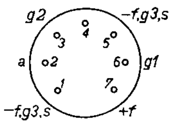
PENTODE for use as R.F. and I.F. amplifier in battery receivers
PENTHODE pour utilisation en amplificatrice H.F. et M.F. dans des appareils-batterie
PENTODE zur Verwendung als HF- und ZF-Verstärker in Batteriegeräten

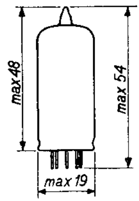
Heating : direct by D.C.
series or parallel supply
Chauffage: direct par C.C.
alimentation en série ou en parallèle
Heizung : direkt durch Gleichstrom
Serien-oder Parallelspeisung

| | |
|---|---|
| Parallel supply<br>Alimentation en parallèle<br>Parallelspeisung | $V_f$ = 1,4 V<br>$I_f$ = 50 mA |
| Series supply<br>Alimentation en série<br>Serienspeisung | $V_f$ = 1,3 V |

Dimensions in mm
Dimensions en mm
Abmessungen in mm




Base, culot, Sockel: Miniature

| | |
|---|---|
| Capacitances<br>Capacités<br>Kapazitäten | $C_a$ = 7,5 pF<br>$C_{g1}$ = 3,6 pF<br>$C_{ag1}$ < 0,01 pF[1]) |

---

[1]) Measured with external screening
Mesuré avec blindage extérieur
Gemessen mit äusserer Abschirmung

Operating characteristics for use as H.F. or I.F. amplifier
Caractéristiques d'utilisation en amplificatrice H.F. ou M.F.
Betriebsdaten als H.F.- oder Z.F. Verstärker

| | | | | | | |
|---|---|---|---|---|---|---|
| Va | = | 45 | | 67,5 | | V |
| Vg2 | = | 45 | | 67,5 | | V |
| Vg1 | = | 0 | -10 | 0 | -16 | V |
| Ia | = | 1,7 | - | 3,4 | - | mA |
| Ig2 | = | 0,7 | - | 1,5 | - | mA |
| S | = | 700 | 10 | 875 | 10 | µA/V |
| Ri | = | 0,35 | >10 | 0,25 | >10 | MΩ |
| µg2g1 | = | 11 | - | 11 | - | |
| Req | = | - | - | 20 | - | kΩ |

| | | | | | | |
|---|---|---|---|---|---|---|
| Va | = | 90 | | 90 | | V |
| Vg2 | = | 45 | | 67,5 | | V |
| Vg1 | = | 0 | -10 | 0 | -16 | V |
| Ia | = | 1,8 | - | 3,5 | - | mA |
| Ig2 | = | 0,65 | - | 1,4 | - | mA |
| S | = | 750 | 10 | 900 | 10 | µA/V |
| Ri | = | 0,8 | >10 | 0,5 | >10 | MΩ |
| µg2g1 | = | 11 | - | 11 | - | |
| Req | = | - | - | 19 | - | kΩ |

Limiting values
Caractéristiques limites
Grenzdaten

| | | | |
|---|---|---|---|
| Va | = max. | 90 | V |
| Wa | = max. | 0,35 | W |
| Vg2 | = max. | 67,5 | V |
| Wg2 | = max. | 0,11 | W |
| Ik | = max. | 5,5 | mA |
| Vg1 (Ig1=+0,3µA) | = max. | -0,2 | V |
| Rg1 | = max. | 3 | MΩ |

# DF 91 PHILIPS

Operating characteristics for use as R.F. or I.F. amplifier
Caractéristiques d'utilisation en amplificatrice H.F. ou M.F.
Betriebsdaten als HF- oder ZF-Verstärker

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $V_a$ | = | 45 | | 67,5 | | 90 | | V |
| $V_{g2}$ | = | 45 | | 45 | | 45 | | V |
| $V_{g1}$ | = | 0 | −10 | 0 | −10 | 0 | −10 | V |
| $I_a$ | = | 1,7 | – | 1,75 | – | 1,8 | – | mA |
| $I_{g2}$ | = | 0,7 | – | 0,68 | – | 0,65 | – | mA |
| S | = | 700 | 10 | 725 | 10 | 750 | 10 | μA/V |
| $R_i$ | = | 0,35 | >10 | 0,6 | >10 | 0,8 | >10 | MΩ |
| $\mu_{g2g1}$ | = | 11 | – | 11 | – | 11 | – | |
| $R_{eq}$ | = | 18 | – | 17 | – | 16 | – | kΩ |

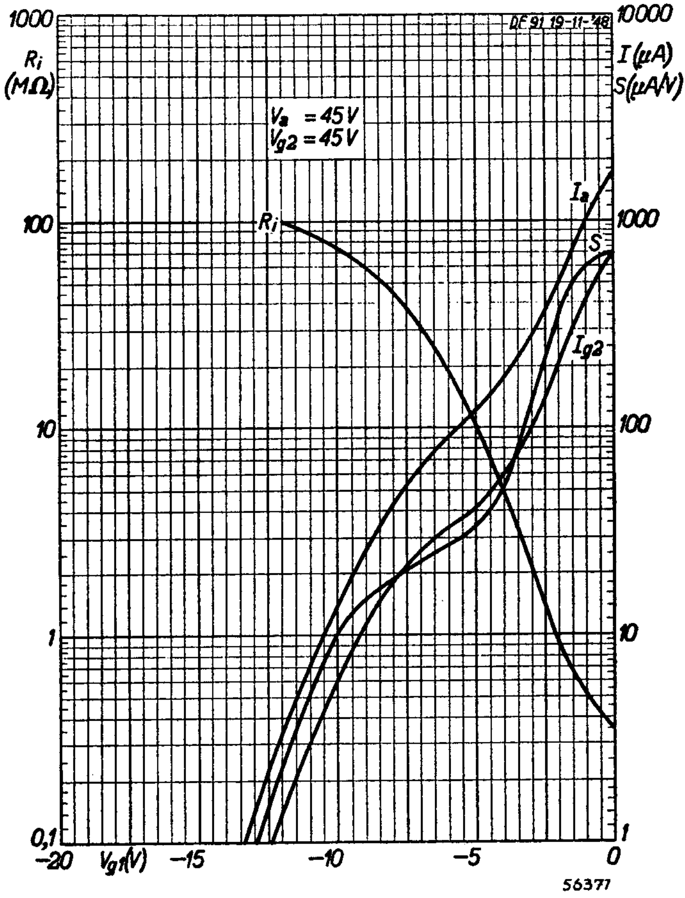
Limiting values
Caractéristiques limites
Grenzdaten

| | | | |
|---|---|---|---|
| $V_b$ | = max. | 120 | V |
| $V_b$ | = max. | 140 | V[1] |
| $V_a$ | = max. | 90 | V |
| $W_a$ | = max. | 0,5 | W |
| $V_{g2}$ | = max. | 67,5 | V |
| $W_{g2}$ | = max. | 0,2 | W |
| $I_k$ | = max. | 5,5 | mA |
| $V_{g1}$ ($I_{g1}$=+0,3μA) | = max. | −0,2 | V |
| $R_{g1}$ | = max. | 3 | MΩ |

[1]) Absolute value
Valeur absolue
Absolutwert

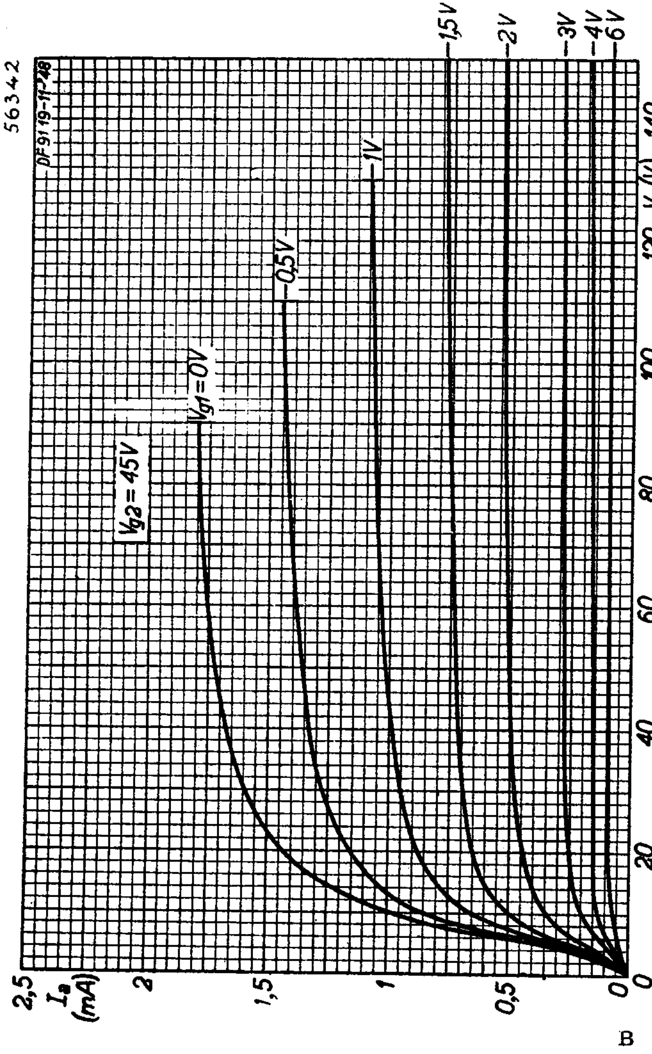
"Miniwatt"

**DF 91**

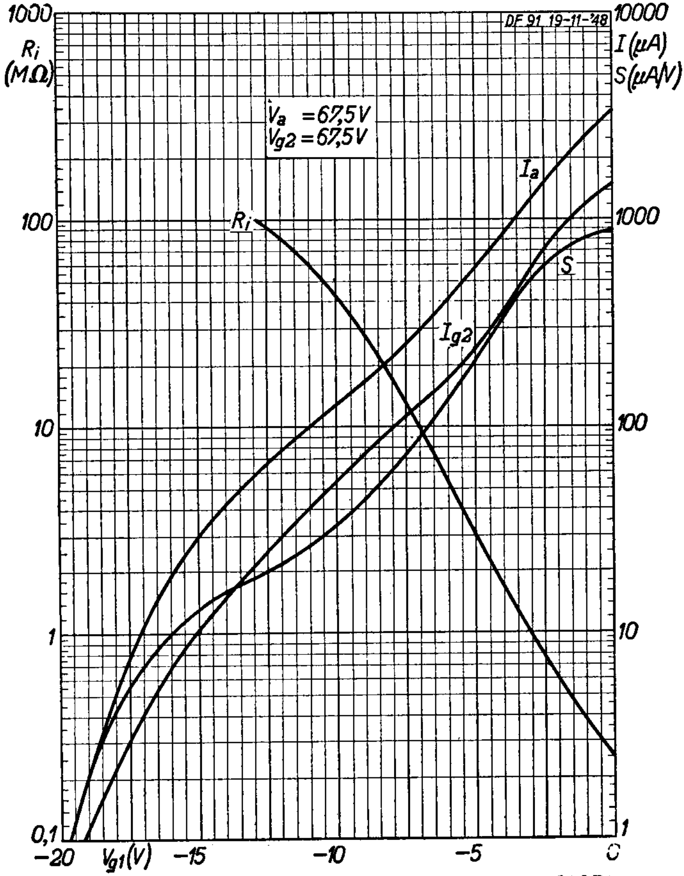


# DF 91

"Miniwatt"

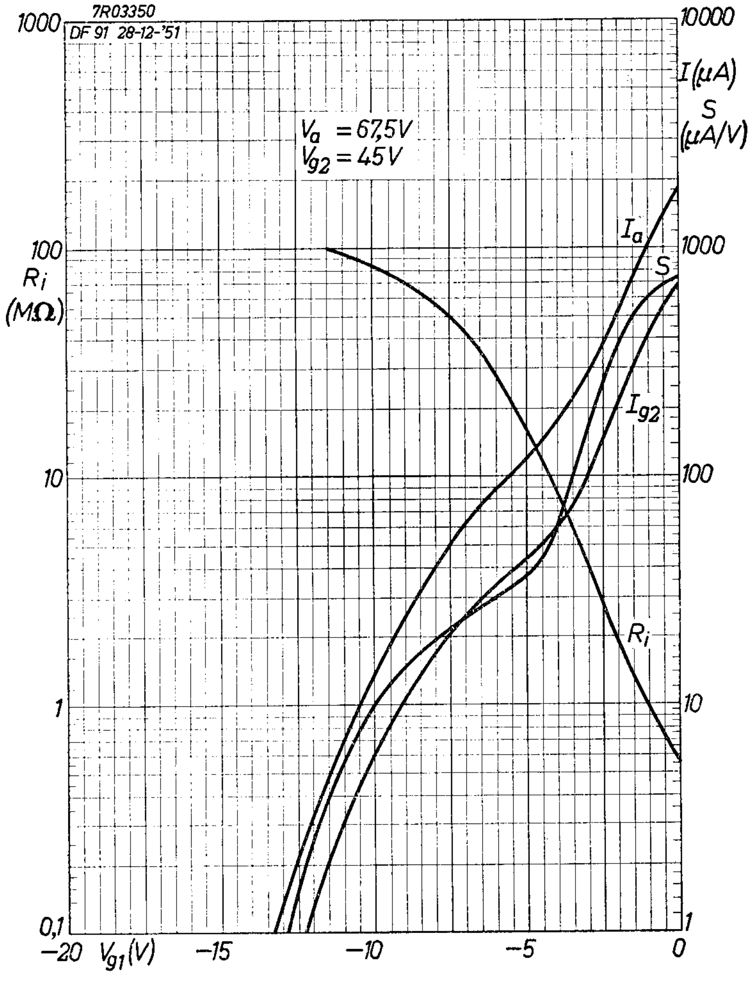



B


DF 91 19-11-'48
1000
Ri
(MΩ)
100
10
1
0,1
10000
I (μA)
S (μA/V)
1000
100
10
1
Va =67,5V
Vg2 =67,5V
Ri
Ia
Ig2
S
−20
Vg1(V)
−15
−10
−5
0
56374

# PHILIPS

**DF 91**



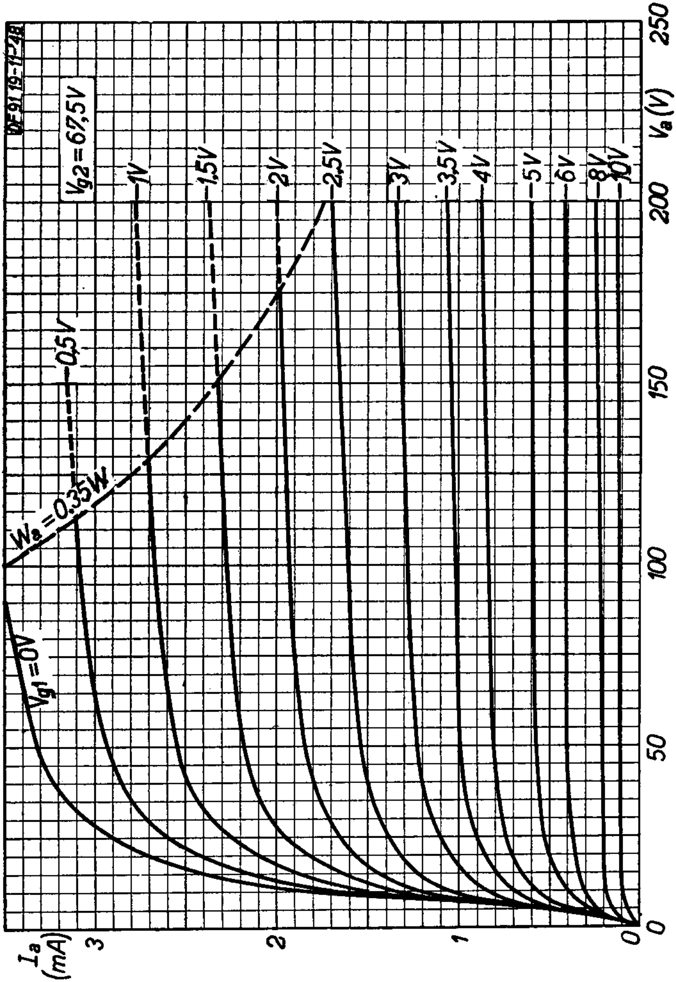

11.11.1953

C

# DF 91

"Miniwatt"

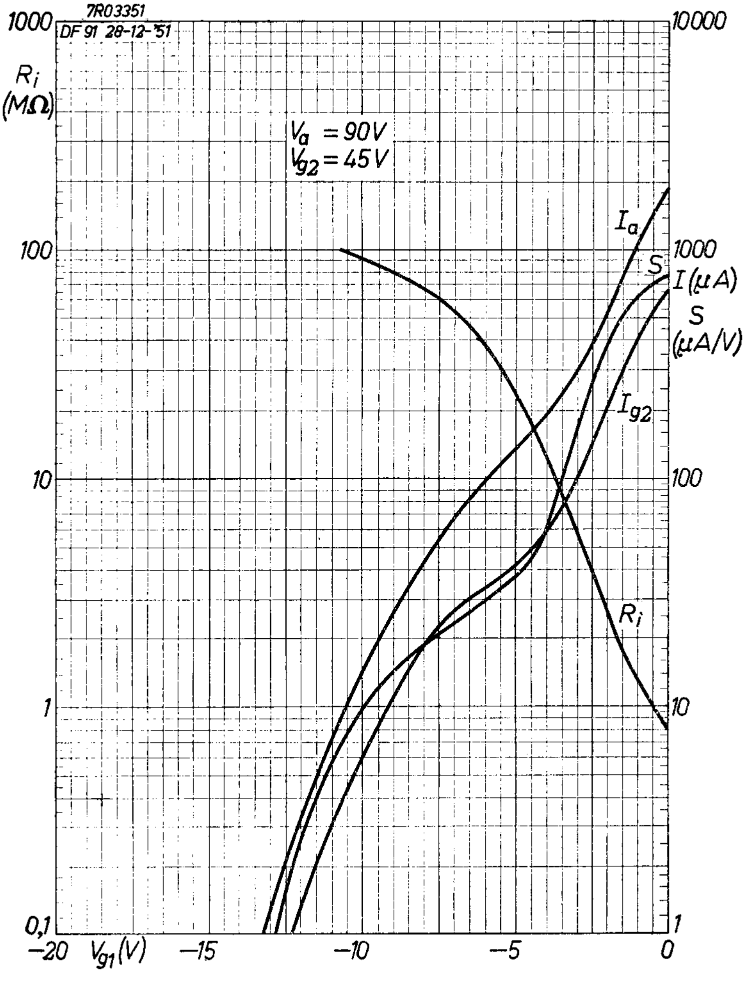
56341



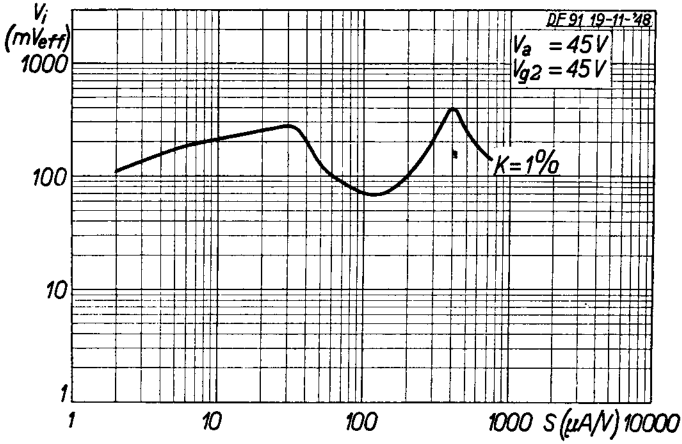

D

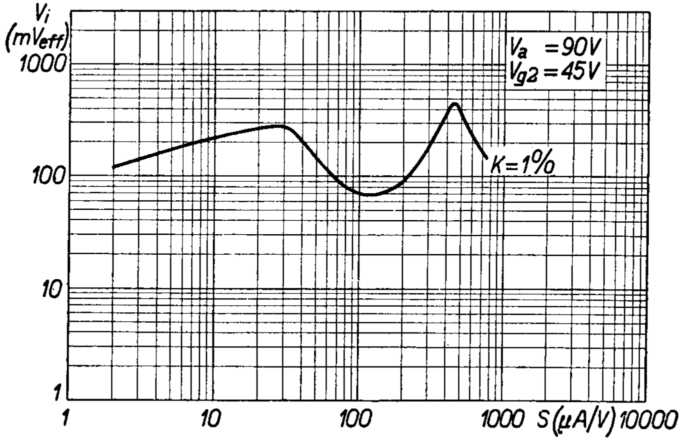
# DF 91

# PHILIPS



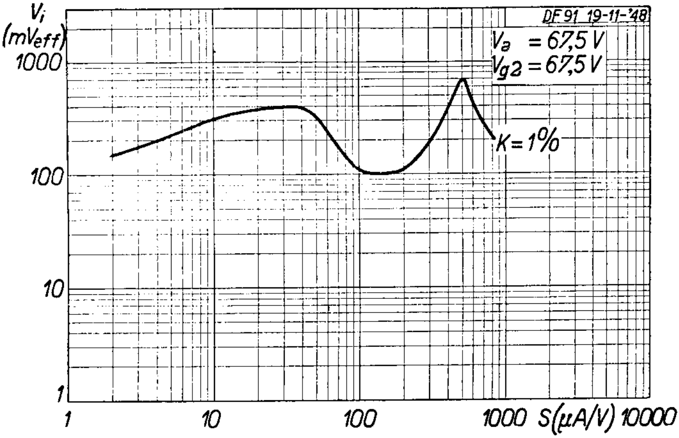

D

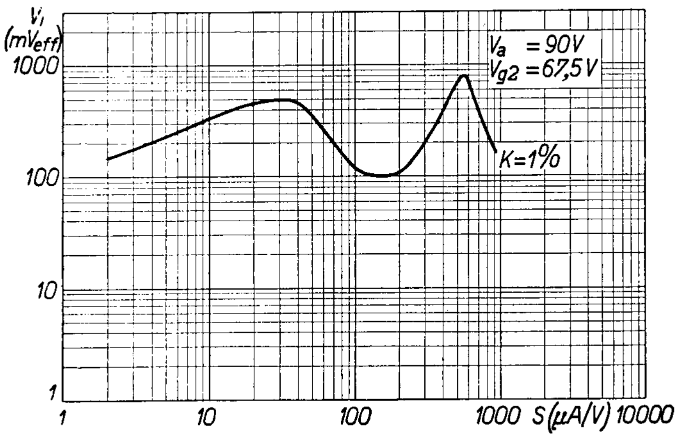

$V_i$ ($mV_{eff}$)
1000
100
10
1
1
10
100
1000
S (μA/V)
10000
DF 91 19-11-'48
$V_a$ = 45 V
$V_{g2}$ = 45 V
K=1%


$V_i$ ($mV_{eff}$)
1000
100
10
1
1
10
100
1000
S (μA/V)
10000
$V_a$ = 90V
$V_{g2}$ = 45V
K=1%

56372

"Miniwatt"




56373

PHILIPS

Electronic Tube

HANDBOOK

**DF91**

| **page** | **sheet** | **date** |
|---|---|---|
| 1 | 1 | 1950.12.12 |
| 2 | 1 | 1953.11.11 |
| 3 | 2 | 1950.12.12 |
| 4 | 2 | 1953.11.11 |
| 5 | A | 1949.01.25 |
| 6 | B | 1949.01.25 |
| 7 | C | 1949.01.25 |
| 8 | C | 1953.11.11 |
| 9 | D | 1949.01.25 |
| 10 | D | 1953.11.11 |
| 11 | E | 1949.01.25 |
| 12 | F | 1949.01.25 |
| 13 | FP | 2000.01.21 |